

WASHINGTON AGRICULTURAL CHEMICAL USAGE DRY ONIONS August 2003



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DRY ONIONS

Results of the 2002 Vegetable Chemical Use Survey are presented in the following tables. The survey was designed to collect data on chemical applications made from the end of the 2001 harvest through completion of the 2002 harvest from a sampling of vegetable growers in Washington. Targeted crops in Washington included asparagus, processing carrots, processing sweet corn, dry onions, and processing green peas. The probability nature of the survey allowed for estimates that are representative of chemical use on all targeted vegetables in the state.

Survey results include estimates of total area treated, number of applications, rates per application and per crop year, and total pounds of chemicals applied. Data are summarized for the primary nutrients and for the active ingredients of pesticides and other chemicals applied. Pesticide data were collected for specific formulations of active ingredients (trade name products) and then converted to active ingredient. Therefore, the estimates associated with a particular active ingredient may represent applications of several trade name products. Pesticide application rates also reflect partial coverage applications as a result of band, spot, and alternate row spraying techniques.

Six states were surveyed for dry onions in 2002: California, Georgia, New York, Oregon, Texas, and Washington. Surveyed acreage totaled 126,500 acres and Washington accounted for 14 percent of total surveyed acreage.

About 96 percent of the dry onion acreage planted in the major producing states received an application of nitrogen in 2002. Oregon and California applied 276

pounds and 213 pounds of nitrogen, respectively. Washington growers put on 203 pounds per acre and Texas applied 156 pounds per acre. Georgia farmers applied 121 pounds per acre while New York farmers applied the smallest amount of nitrogen during the year, 108 pounds. Phosphate fertilizer was applied to 89 percent of the dry onion acreage. The rate applied ranged from a low of 106 pounds per acre in New York to the high of 222 pounds per acre in California. Potash was applied to 73 percent of the onions planted. In California, 57 percent of the acres received potash, 64 percent received it in Texas, and 71 percent received it in Washington. Oregon received 83 percent acres treated with potash. Georgia and New York were highest, applying potash to 100 percent of the acreage.

Ninety percent of the dry onion acreage received at least some herbicide application. Oxyfluorfen was used the most, being applied to 76 percent of the dry onion acreage. Insecticides were applied to 78 percent of the dry onion acreage. The range of insecticide treatments was from 47 percent of the Georgia onion acres to 99 percent in Oregon. Lambda-cyhalothrin and chlorpyrifos were the predominant insecticides used, at 49 and 31 percent, respectively. Fungicides were applied to 87 percent of the acres planted. Mancozeb was used on 49 percent of the acreage planted, and chlorothalonil was used on 40 percent.

Nitrogen fertilizer was applied to 96 percent of the acreage in the six surveyed states. Phosphate fertilizer was applied to 89 percent of the acreage, and potash was applied to 73 of the acreage.

**Dry Onions: Fertilizer Applications, Total Acreage & Percentage Receiving Applications,
Major States & Total, 2000 & 2002**

State	Planted Acreage		Area Receiving 1/					
			Nitrogen		Phosphate		Potash	
	2000	2002	2000	2002	2000	2002	2000	2002
	Acres		Percent					
Arizona 2/	3,300	-	-	-	-	-	-	-
California	51,700	45,400	-	97	-	80	-	57
Georgia	15,000	14,700	-	100	-	100	-	100
Michigan 2/	4,100	-	-	-	-	-	-	-
New York	13,400	12,700	-	100	-	100	-	100
Oregon	17,900	17,400	-	100	-	99	-	83
Texas	20,000	19,200	-	100	-	100	-	64
Washington	15,800	17,100	-	80	-	75	-	71
Wisconsin 2/	2,000	-	-	-	-	-	-	-
TOTAL	143,200	126,500	-	96	-	89	-	73

1/ Refers to acres receiving one or more applications of a specific fertilizer ingredient.

2/ These states were not surveyed in the 2002 Vegetable Chemical Use Survey.

- Fertilizer applications were not collected during the 2000 Vegetable Chemical Use Survey.

**Dry Onions: Pesticide Applications, Total Acreage & Percentage Receiving Applications,
Major States & Total, 2000 & 2002**

State	Planted Acreage		Area Receiving 1/							
			Herbicides		Insecticides 2/		Fungicides		Other Chemicals	
	2000	2002	2000	2002	2000	2002	2000	2002	2000	2002
	Acres		Percent							
Arizona 3/	3,300	-	70	-	**	-	61	-	**	-
California	51,700	45,400	66	83	58	74	70	80	11	17
Georgia	15,000	14,700	98	92	77	47	100	100	*	**
Michigan 3/	4,100	-	99	-	95	-	97	-	**	-
New York	13,400	12,700	97	90	99	92	99	99	46	45
Oregon	17,900	17,400	99	99	99	99	90	90	62	76
Texas	20,000	19,200	79	94	83	71	77	78	7	**
Washington	15,800	17,100	95	93	42	92	66	94	44	72
Wisconsin 3/	2,000	-	99	-	96	-	95	-	**	-
TOTAL	143,200	126,500	83	90	72	78	80	87	23	31

* Area applied is less than one percent.

** Insufficient reports to publish data for one or more of the pesticide classes.

1/ Refers to acres receiving one or more application of a specific pesticide class.

2/ Total applied excludes Bt's (*Bacillus thuringiensis*). Quantities are not available because amounts of active ingredient are not comparable between products.

3/ These states were not surveyed in the 2002 Vegetable Chemical Use Survey.

Dry Onions: Agricultural Chemical Applications, Washington, 2000 & 2002 1/

Active Ingredient 2/	Area Applied 3/		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2000	2002	2000	2002	2000	2002	2000	2002	2000	2002
Herbicides	Percent		Number		Pounds Per Acre				1,000 Pounds	
Bromoxynil	62	50	1.6	1.6	0.12	0.30	0.21	0.50	2.0	4.3
Clethodim	2	77	1.0	1.1	0.13	0.13	0.13	0.14	*	1.9
DCPA	-	66	-	1.0	-	5.23	-	5.23	-	59.1
Fluazifop-P-butyl	26	-	1.8	-	0.11	-	0.20	-	0.8	-
Glyphosate	20	50	1.0	1.0	0.46	0.38	0.46	0.38	1.4	3.2
Oxyfluorfen	88	91	1.7	1.4	0.13	0.20	0.22	0.29	3.0	4.5
Pendimethalin	85	85	1.2	1.0	0.58	0.67	0.74	0.73	9.9	10.6
Sethoxydim	32	4	1.0	1.0	0.20	0.25	0.21	0.27	1.0	0.2
Insecticides										
Chlorpyrifos	19	69	1.0	1.0	0.87	0.93	0.87	0.93	2.6	11.0
Lambda-cyhalothrin	26	57	2.3	2.0	0.03	0.03	0.07	0.06	0.3	0.6
Malathion	2	-	1.0	-	1.09	-	1.13	-	0.3	-
Oxamyl	-	34	-	2.1	-	0.92	-	1.96	-	11.3
Fungicides										
Chlorothalonil	-	61	-	2.4	-	1.12	-	2.72	-	28.1
Copper ammonium	16	-	2.9	-	0.20	-	0.57	-	1.5	-
Copper hydroxide	16	29	1.4	2.9	0.85	0.73	1.19	2.17	3.0	10.8
Mancozeb	38	38	2.1	2.6	1.81	0.66	3.92	1.73	23.2	11.2
Other Chemicals										
Maleic hydrazide	42	51	1.0	1.0	1.16	1.93	1.16	1.97	7.7	17.2
Metam-sodium	-	64	-	1.0	-	126.40	-	126.56	-	1,393.4

* Total applied is less than 50 lbs.

1/ Planted acres in 2000 and 2002 for Washington were 15,800 acres and 17,100 acres, respectively.

2/ Insufficient data to publish data for the following agricultural chemicals: 2000: Herbicides: Bensulide, Cyanazine, DCPA, Paraquat. Insecticides: Azadirachtin, Azinphos-methyl, Diazinon, Dimethoate, Methomyl, Methyl parathion, Permethrin, Petroleum distillate. Fungicides: Chlorothalonil, Iprodione, Metalaxyl, Sulfur, Vinclozolin. Other Chemicals: GABA, Garlic oil, L-Glutamic acid, Metam-sodium. 2002: Herbicides: Fluazifop-P-butyl, Paraquat, S-Metolachlor, Trifluralin. Insecticides: Azadirachtin, Azinphos-methyl, Diazinon, Kaolin, Malathion, Methomyl, Methyl parathion, Permethrin, Petroleum distillate, Zeta-cypermethrin. Fungicides: Copper amm. complex, Copper resinate, Cyprodinil, Dicloran, Fludioxonil, Iprodione, Maneb, Mefenoxam, Metalaxyl, Sulfur. Other Chemicals: Cytokinins.

3/ Refers to acres receiving one or more applications of a specific agricultural chemical.

Note: Data may not multiply across due to rounding.

Dry Onions: Agricultural Chemical Applications, Major States, 2000 & 2002 1/

Active Ingredient 2/		Area Applied 3/		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
		2000	2002	2000	2002	2000	2002	2000	2002	2000	2002
		Percent		Number		Pounds Per Acre				1,000 Pounds	
Herbicides	Bensulide	10	6	1.3	1.1	3.43	2.58	4.72	3.03	70.6	24.1
	Bromoxynil	45	49	1.7	1.9	0.14	0.14	0.25	0.27	16.3	16.9
	Clethodim	4	13	1.2	1.2	0.13	0.13	0.15	0.15	0.8	2.5
	DCPA	8	18	1.4	1.0	5.79	4.86	8.42	5.14	96.2	119.4
	Dimethenamid	2	6	1.4	2.4	0.96	1.02	1.40	2.48	3.3	17.9
	Fluazifop-P-butyl	19	12	1.3	1.2	0.16	0.22	0.22	0.28	5.9	4.3
	Glyphosate	10	19	1.0	1.0	0.52	0.56	0.54	0.59	8.2	13.9
	Metolachlor	3	-	1.2	-	1.20	-	1.53	-	6.5	-
	Oxyfluorfen	68	76	1.9	2.4	0.11	0.09	0.20	0.24	19.6	22.6
	Paraquat	2	4	1.1	1.1	0.40	0.54	0.47	0.61	1.2	3.4
	Pendimethalin	54	52	1.5	1.4	1.02	0.80	1.54	1.20	118.3	78.1
	S-Metolachlor	-	5	-	1.0	-	1.39	-	1.46	-	8.7
	Sethoxydim	11	6	1.1	1.3	0.18	0.21	0.21	0.29	3.2	2.3
	Trifluralin	3	4	1.1	1.2	0.85	0.75	0.97	0.95	3.6	5.3
Insecticides	Azadirachtin	*	4	1.6	1.5	0.01	0.04	0.02	0.07	**	0.4
	Azinphos-methyl	2	8	1.1	1.5	0.50	0.68	0.58	1.02	1.7	10.3
	Bt (Bacillus thur.) 4/	3	1	3.2	1.7						
	Carbaryl	*	-	2.7	-	0.68	-	1.89	-	**	-
	Chlorpyrifos	26	31	1.0	1.0	1.25	1.13	1.30	1.17	47.3	46.5
	Cypermethrin	18	5	1.8	1.9	0.08	0.09	0.14	0.17	3.7	1.0
	Diazinon	19	20	1.5	1.5	1.36	1.13	2.08	1.79	55.7	44.3
	Lambda-cyhalothrin	44	49	2.5	2.8	0.03	0.03	0.07	0.07	4.6	4.7
	Malathion	2	2	1.3	1.4	1.59	1.20	2.18	1.76	4.9	4.6
	Methomyl	19	25	1.8	2.1	0.61	0.52	1.14	1.14	31.5	35.7
	Methyl parathion	6	12	2.4	2.2	0.50	0.45	1.20	0.98	9.5	15.2
	Oxamyl	8	9	1.0	1.8	0.55	0.88	0.57	1.60	6.9	17.5
	Permethrin	19	8	2.0	1.8	0.13	0.16	0.26	0.29	7.3	2.8
	Petroleum distillate	1	-	2.9	-	0.49	-	1.47	-	2.2	-
	Potassium salts	*	-	1.2	-	0.98	-	1.19	-	0.4	-
	Zeta-cypermethrin	5	17	1.5	2.5	0.05	0.04	0.07	0.11	0.4	2.4
Fungicides	Azoxystrobin	-	13	-	1.5	-	0.16	-	0.24	-	3.9
	Chlorothalonil	46	40	3.4	3.4	1.24	1.07	4.31	3.67	282.0	185.1
	Copper amm. complex	2	2	2.6	2.0	0.18	0.21	0.48	0.41	1.6	1.0
	Copper hydroxide	31	25	3.1	2.5	0.75	0.66	2.36	1.68	103.9	52.8
	Copper resinate	-	5	-	3.9	-	0.19	-	0.74	-	4.3
	Dicloran	*	1	1.1	1.5	1.37	1.74	1.58	2.73	1.8	4.5
	Iprodione	20	18	2.0	1.8	0.61	0.54	1.25	1.02	36.4	22.9
	Mancozeb	57	49	3.6	3.7	1.37	1.35	4.97	5.03	405.1	310.6
	Maneb	12	6	2.6	1.7	1.52	1.61	4.09	2.77	70.3	21.1
	Mefenoxam	17	20	1.4	1.4	0.10	0.21	0.14	0.32	3.5	8.2
	Metalaxyl	21	17	1.4	1.2	0.12	0.10	0.18	0.12	5.3	2.6
	Sulfur	*	2	2.5	1.8	1.33	0.91	3.41	1.72	3.1	5.0
	Vinclozolin	*	-	1.6	-	0.62	-	1.03	-	0.6	-
Other Chemicals	Busan 881	*	*	1.0	1.1	157.12	194.84	157.12	222.21	63.2	226.5
	Chloropicrin	3	3	1.0	1.0	31.62	36.74	32.17	36.87	138.7	162.9
	Dichloropropene	5	6	1.0	1.0	164.21	174.47	164.21	174.83	1,255.4	1,239.9
	GABA	-	1	-	1.8	-	0.09	-	0.16	-	0.3
	L-Glutamic acid	-	1	-	1.8	-	0.09	-	0.16	-	0.3
	Maleic hydrazide	15	19	1.0	1.0	1.55	1.48	1.55	1.50	33.5	36.7
	Metam-sodium	2	14	1.1	1.0	101.27	148.47	114.83	157.42	378.4	2,757.4

* Applied on less than one percent of acres. ** Total applied is less than 50 lbs.

1/ Planted acres in 2000 for the 9 major states were 143,200 acres and in 2002 for the 6 major states were 126,500 acres. States in 2000 included AZ, CA, GA, MI, NY, OR, TX, WA, & WI and the states in 2002 were CA, GA, NY, OR, TX, & WA.

2/ Insufficient reports to publish data for the following agricultural chemicals: 2000: Herbicides: Atrazine, Bentazon, Cyanazine, Dicamba, Diuron, Glyphosate, is. salt, Napropamide, Naptalam, Quizalofop-ethyl, S-Metolachlor, Sulfosate. Insecticides: Acephate, Beauveria bassiana, Dimethoate, Endosulfan, Esfenvalerate, Ethyl parathion, Fenamiphos, Fonofos, Imidacloprid, Neem oil, Neem oil, clar. hyd., Oxydemeton-methyl, Phosmet, Rotenone, Spinosad, Tebufenozide. Fungicides: Azoxystrobin, Benomyl, Copper oxide, Copper oxychlo. sul., Copper resinate, Copper sulfate, Fosetyl-al. Other Chemicals: Cytokinins, GABA, Garlic oil, L-Glutamic acid, Metaldehyde, Methyl bromide. 2002: Herbicides: Alachlor, Atrazine, Bentazon, Dimethenamid-P, Linuron, MCPB. Insecticides: Carbaryl, Dimethoate, Endosulfan, Esfenvalerate, Ethyl parathion, Imidacloprid, Indoxacarb, Kaolin, Methamidophos, Petroleum distillate, Potassium salts. Fungicides: Basic copper sulfate, Copper oxychlo. sul., Cyprodinil, Fludioxonil, Fosetyl-al, Trichoderma harz. Other Chemicals: Cytokinins, Methyl bromide, Monocarbamide dihyd.

3/ Refers to acres receiving one or more applications of a specific agricultural chemical.

4/ Rates and total applied are not available because amounts of active ingredient between products are not comparable.

Note: Data may not multiply across due to rounding.